

TRAUMATISMS INFILCTED BY ANIMALS.

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BITES and scratches from animals are, perhaps, not so frequent as we might suppose, and especially those from wild animals, yet they are sufficiently frequent to warrant the surgeon's careful attention.

Much has been written and many cases reported of scratches and bites from cats and dogs which have been followed by what was believed, by members of the medical profession, to be hydrophobia, but while the writer has seen numerous and severe as well as trivial traumatisms received from domestic as well as wild animals, he has yet to see one single case in which he was thoroughly convinced that the party suffered from hydrophobia; but, on the contrary, where disease did follow infection of such wounds, it has evidently been tetanus instead of hydrophobia.

It is unfortunate that in many instances where persons have been wounded by a dog or cat, the animals are killed without giving the attending physician an opportunity to determine whether such animals were afflicted with hydrophobia or not. We are of the firm belief that hydrophobia is contagious, and that the bite of the animal will not produce hydrophobia without the animal being afflicted with the disease itself. We are also of the firm belief that a punctured or lacerated wound due to the bite or scratch of an animal often is followed by tetanus. This is quite logical, owing to the fact that the habitat of the bacillus tetani is found in the earth and readily finds

lodgement in the claws and teeth of domestic as well as wild animals, and in turn may be introduced into the human economy by a bite or scratch.

In the firm belief that every contagious disease is produced by specific pre-existing germs we do not believe that it is reasonable to anticipate the development of hydrophobia from an animal which did not have the disease at the time of injury. Certainly it would be very improbable for it to be conveyed by a scratch of a claw, but, on the other hand, we can readily understand how tetanus could be conveyed in this manner. In the hundreds of cat and dog bites which the author has seen and treated he has only seen a few cases that were afflicted with tetanus and none with hydrophobia. He recalls a case of a boy in which he was called in counsel, in Columbus, Ohio, some years ago, who was snapped by a small dog while playing with it, and in a few hours marked symptoms of tetanus followed, which by some was thought to be hydrophobia, but which was clearly of tetanic origin. The boy suffered from repeated spasms which threw him into the opisthotonus position, and which proved fatal in a few hours.

If the position taken by some medical men, that any animal bite is liable to be followed with hydrophobia, whether the animal has the disease or not, be true, we do not understand why we should not have severe injuries from wild beasts followed with such disease, as the larger and greater the number of punctures the more extended the field for infection.

Lion Bite.—I recall the case of a lion bite which occurred to one of the keepers of lions in a large show, who was severely bitten through the right thigh, April 19, 1896, while attending a lion in a cage at Columbus, Ohio. A young man, aged twenty-five years, was attacked by a lion who gave him one severe craunch, which pierced the thigh just below the large trochanter, one of the upper teeth passing through the flesh just outside of the femoral artery. The other upper tooth being broken off only contused the parts. The two lower canines passed through the vastus externus and under the quadriceps extensor, tearing the muscles from the bone, in addition to producing two large punctured wounds. The party was taken to the Protestant Hospital where the author treated him and converted the

punctured wounds into open wounds by free incisions, washing the parts thoroughly with peroxide of hydrogen. Gauze drainage was inserted for a few days, the wound was kept thoroughly cleansed and repair followed rapidly without suppuration, without a rise of temperature, and the patient had no symptoms of nervous irritability whatever; made a perfect recovery and was discharged from the hospital May 19, just four weeks after he was admitted. •



Grizzly bear injuries.

Grizzly Bear Injury.—On June 21, 1899, David Doty, an old bear hunter of Piedmont, Wyoming, was admitted to the Wyoming General Hospital suffering from numerous severe lacerations, the result of coming in contact with an old she grizzly who bit and scratched him in a most frightful manner. The victim was sixty-two years of age, white, married, an American, and had spent a large portion of

his life in hunting, and with the exception of rheumatism had always been healthy.

On June 19, while out hunting, he came across a she grizzly with some cubs, and, unfortunately, ran on to them before he was aware they were in the brush. The first thing he knew he was struck by the huge paw of the grizzly and knocked down, when she immediately proceeded to scratch and bite him practically from head to foot, as will be shown in the accompanying photograph.

After having injured him in this terrible manner she voluntarily left him, after which he is reported to have shot her as she was walking away.

He was ten miles from home, and in this crippled condition managed to crawl to the nearest camp, some five miles distant, when he was taken to his home and sent to the hospital, arriving at the latter two days later. There were several severe lacerations of the scalp caused by the claws of the grizzly, which together with the tooth-bites on the body and the claw injuries aggregated in the neighborhood of one hundred wounds, extending altogether from the top of his head to the calf of the leg along the left side of the body. With one wrench of her powerful jaw she crushed the five lower ribs and tore through the soft parts, puncturing and crushing a portion of the lower lobe of the left lung. Another wrench of the jaw loosened the flesh from the great trochanter of the left hip, and in addition to these the left arm and leg were bitten and scratched in many places.

Treatment consisted in cleansing the wounds thoroughly with bichloride evaporating solution,¹ packing or covering with gauze saturated with this solution and keeping the wounds as thoroughly cleansed as possible. Notwithstanding the strict antiseptic measures which were inaugurated, the large number of wounds and the time that had expired after the injury, together with devitalization of the tissues by the crush of the bear's monstrous jaws, caused more or less necrosis and suppuration of a few of the wounds. Constitutional disturbances were of little or no consequence until the third day, when he had a rise of temperature to $104\frac{1}{2}$ ° F. On the twenty-eighth day after the accident the temperature again rose to $104\frac{1}{2}$ ° F., but was quickly controlled by the discovery of a pocket of pus which formed in the

¹ Bichloride evaporating solution: eighty parts boracic acid solution, three per cent.; ten parts alcohol; ten parts glycerin; and eight drops of a saturated solution of bichloride of mercury to the pint. The saturated solution used being two ounces of hydriargyrum bichloride to two ounces of alcohol and six ounces of glycerin; eight drops to the pint, equals 1 to 3500.

left pleura which was thoroughly cleansed; the temperature subsided and the patient made a rapid and uninterrupted recovery, and was discharged from the hospital August 12, 1899. A few days ago I heard from him, and learned that he was in good health and was preparing to look for more bears to conquer.

Remarks.—Here are two cases, the last one especially, in which lacerations of the body were simply terrific, and yet there was not the slightest symptom of hydrophobia or tetanus. The only constitutional disturbances which we had were those arising from the presence of pus, due to infection and necrotic tissue.

In the treatment of this class of cases we believe it to be essential that all punctured wounds be converted into open ones by free incision, thus enabling the surgeon to get access to every part of the lacerated and torn tissues, without which he is unable to cleanse them from infective material. If, on the other hand, this is accomplished, there is little to dread in the treatment of these wounds outside of pus infection, unless they involve some of the more vital parts. I have seen numerous punctured wounds apparently repaired, by first intention, but after a few weeks the temperature would rise, hectic symptoms present themselves, and on further examination a pocket of pus would be discovered somewhere, usually in the deeper parts of the punctured wound, not unfrequently producing extensive destruction and requiring a much more formidable operation than would have been necessary to have converted a punctured wound into an open one.

In the treatment of this class of wounds I find the so-called bichloride evaporating solution, the formula of which will be found in a foot-note, one of the most serviceable chemical preparations which I have had the pleasure of using. It is not irritating, and if thoroughly applied in the early stages it will, as a rule, destroy all infective germs. Constitutional treatment in these cases requires but little attention, outside of keeping the secretions active and occasionally the use of tonics.